RE: Siemens Automotive Corporation
FCC ID: M3N-65981411

The following is in response to the comments made on the above referenced Application.

1) This device consists of a UHF 315 MHz RX and LF 125 kHz TX/RX. This application is only requesting Certification of the 125 kHz TX (the 125 kHz RX portion does not fall under the scope of Part 15). Note that the 315 MHz UHF RX is considered a separate RX under 15.101 and not part of a transceiver. Therefore this portion of the device must be approved under a DoC or Certification. Please provide further information regarding which authorization is being utilized for the RX.

The 315 MHz receiver used in this module has been Authorized previously in Germany under a DoC.

2) Please provide a photograph underneath the shield of the RX.

Since the (shielded) 315 MHz receiver is not subject to Authorization procedures in this application (see (1) above) there is no need to proved photos of the RX under the shield.

3) The label contains an FCC logo and the phrase “Tested to Comply With FCC Standards”. It appears that the device may be subjected to a DoC for the RX (see 1 above). However, please note that to approve a device under a DoC, the RX testing must be performed by an accredited lab (NLAP or A2LA, etc). Please explain.

Please see (1) above.

4) Section 5.2 of the test report states that the RBW was usually 1 kHz which contradicts page 6 which states 9 kHz. According to ANSI C63.4, the RBW in this range should be greater than or equal to 100 Hz for 9 kHz to 150 kHz and 9 kHz for 150 kHz to 30 MHz. Please provide further information regarding use of the RBW to ensure that accurate amplitude readings were taken.

Your comment is noted and reports will be clarified for future applications. As a rule, we make measurements at a specified RBW, but when the signal is near the noise floor, or near an ambient, we reduce the bandwidth, and at the same time verifying that the signal is narrow-band and that the readings are not affected by the reduction in bandwidth.

5) The ASK modulation does not necessarily look Manchester encoded. Additionally, because this is actually ASK modulation and not OOK, a 50% duty cycle assumption may not be correct since there is no guarantee the data bit

length is 50%. Please provide further information regarding the modulation and duty cycle.

We agree that, since the third pulse in the pulse train is wider than the normal double pulse, the system does not appear Manchester encoded. This may reduce the duty factor by a fraction of a dB. However, the DTU will still meet the limits by some 60 dB.

6) According to the bandwidth measured, it appears that part of the bandwidth falls in the 90 – 110 kHz restricted band. Note that the FCC considers all emissions within 26 dB of the fundamental to be modulation products and are therefore part of the fundamental. Therefore all emissions that fall in the restricted band must be < 26 dB below the fundamental, regardless of the power level at the fundamental.

We agree that at 110 kHz the spectrum is down only 18dB (p. 8, Report #415031-167A). Please note that this is the second sidelobe of a sin(x)/x pattern, and FCC has accepted the argument that the sidelobes can be considered as spurious and not part of the fundamental emission. Siemens has performed an experiment evaluating the operation of the system with reduced bandwidth that demonstrates the sidelobes are not essential for operation of the system. The experiment write-up is attached.

SIEMENS VDO
Automotive

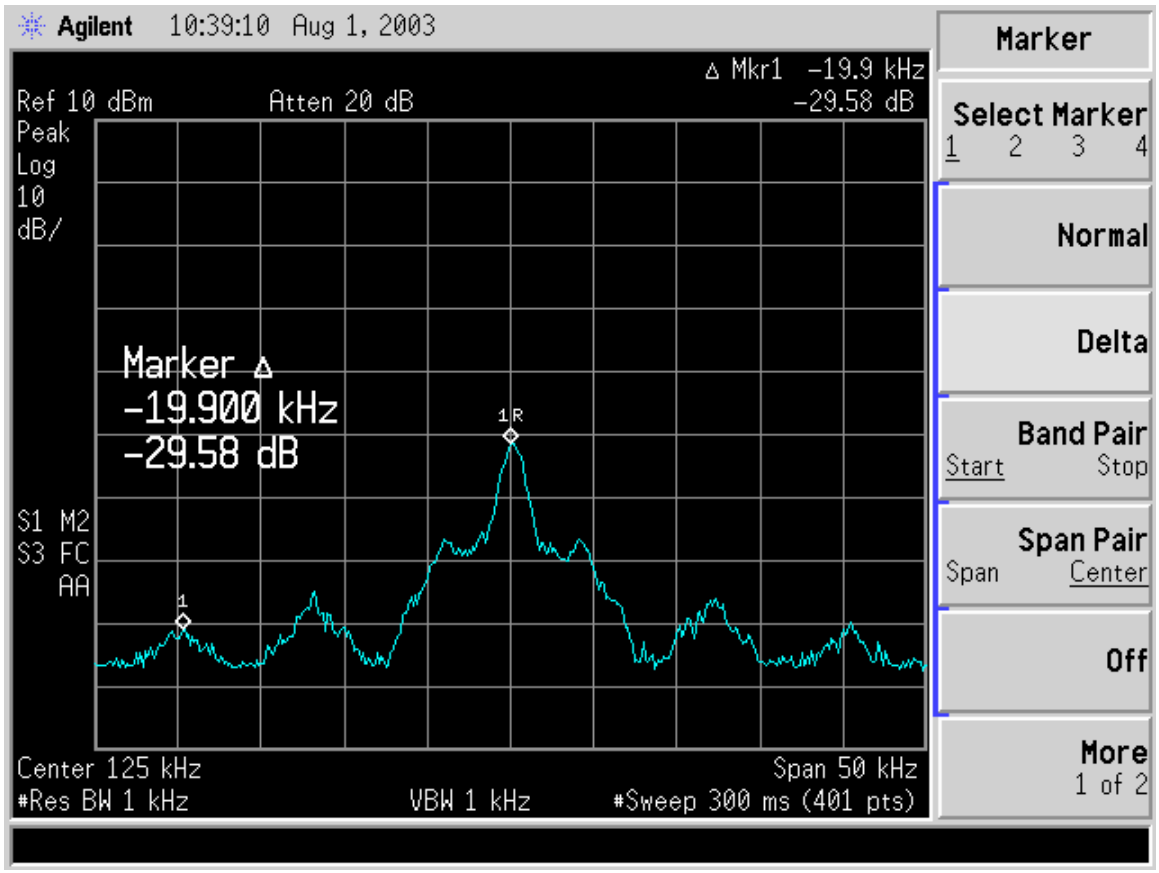
Siemens EasyKey LF PASE Transmitter (5WY7369)

Attn: Dr. Valdis Leipa
Radiation Laboratory / EECS
University of Michigan
Ann Arbor, MI 48109-2122
Ph: (734) 483-4211

8/01/03

This report shows the results of a demonstration that the secondary side lobes and beyond are not required for proper operation of the EasyKey system.

Measurements were taken at the Siemens VDO lab using a "custom" laboratory modulator centered at 125kHz and data generated by the ECU (electronic control unit). A tuned ferrite antenna was used for transmitting the information. The results of modulation are shown in the plot below (fig. 1).



(Fig. 1)

The maximum lower side lobe (105.1kHz) is 29.58dB down from the center frequency power level. The EasyKey system successfully operated with the suppression of this side lobe. Successful operation was monitored using test software to ensure an appropriate transmission to and response from the CID (customer identification device).

A resonant circuit was not implemented in the EasyKey system for this function due to the following reasons:

1. Resonant antennas would result in too much ringing which would lower the maximum data rate.
2. The center frequency would not be nearly as stable due to component tolerances. The variation in center frequency would greatly vary the output power resulting in an unreliable system.
3. Using resonant antennas in this system would be cost prohibitive due to the type and size of components required to handle the high voltage levels.

Kind Regards,
Matthew Doyle
4685 Investment Drive
Troy, MI
48098